

National Imaging Associates, Inc.*	
Clinical guideline PELVIS CT	Original Date: September 1997
CPT Codes: 72192, 72193, 72194	Last Revised Date: April April 2022¹
Guideline Number: NIA_CG_036	Implementation Date: January 2023²

Note: For syndromes for which imaging starts in the pediatric age group, MRI preferred

Note: PELVIS CT **ALONE** SHOULD ONLY BE APPROVED WHEN DISEASE PROCESS IS SUSPECTED TO BE LIMITED TO THE PELVIS. CT Abdomen/Pelvis Combo (CPT Codes: 74176, 74177, 74178) is the correct study when the indication(s) include both the abdomen AND pelvis, such as CTU (CT Urography), CTE (CT Enterography), acute abdominal pain, widespread inflammatory disease or neoplasm. Otherwise, the exam should be limited to the appropriate area (i.e., Abdomen OR Pelvis) which includes the specific organ, area of known disease/abnormality or the area of concern.

INDICATIONS FOR PELVIS CT

Pelvic Pain for Unknown Etiology

- CT allowed after initial workup is inconclusive and must include results of the following:
 - Initial imaging, such as ultrasound (although ultrasound does have limitations, it is a common misconception that ultrasound is not a good tool in ALL obese patients, such that it is often useful even in obese patients and quite reasonable to attempt as a first-line imaging modality particularly given the benefit of no radiation), scope study, or x-ray AND
 - Appropriate laboratory testing (chemistry profile, complete blood count, and urinalysis)
- For acute pelvic pain in a patient over the age of 65^{1, 2} (~~ACR, 2018; Lehtimäki, 2017~~)

Initial staging of prostate cancer

- High Risk and above (T3a or higher, PSA >20*, Gleason 8-10)
- Intermediate Risk (T2b-T2c or PSA 10-20* or Gleason 7) when Nomogram predicts >10% probability of lymph node involvement (MSKCC/Kattan is the nomogram recommended by NCCN 2022³)³

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1— Pelvis CT

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*Note: In patients who have been on a 5-alpha reductase inhibitor (such as proscar) in the past 12 months, an “adjusted PSA” should be used. To adjust, multiply PSA by a factor of 2 (e.g., PSA 6 on finasteride adjusts to a PSA of 12)

Known prostate cancer for workup of recurrence and response to treatment when there is a contraindication for MRI⁴

~~(NCCN, 2019)~~

- Initial treatment by radical prostatectomy
 - Failure of PSA to fall to undetectable levels or PSA detectable and rising on at least 2 subsequent determinations
- Initial treatment radiation therapy
 - Post-RT rising PSA or positive digital exam and is candidate for local therapy

Evaluation of suspicious or known mass/tumors

- Initial evaluation of suspicious pelvic masses/tumors found only in the pelvis by physical exam and ultrasound has been performed
- Further evaluation of abnormality seen on ultrasound (US) or when US would be inconclusive⁵ ~~(ACR, 2013, 2014)~~
- Surveillance: One follow-up exam to ensure no suspicious change has occurred in a tumor in the pelvis. No further surveillance CT unless tumor(s) are specified as highly suspicious or change was found on exam or last follow-up imaging
- Initial staging of known cancer
- Follow-up of known cancer^{4, 6} ~~(Bourgiet, 2016; NCCN, 2019)~~
 - Follow-up of known cancer of patient undergoing active treatment within the past year.
 - Known cancer with suspected pelvis metastasis based on a sign, symptom (e.g., anorexia, early satiety, intestinal obstruction, night sweats, pelvic pain, weight loss, vaginal bleeding), or an abnormal lab value (alpha-fetoprotein, CEA, CA 19-9, p53 mutation)
 -
- For abnormal incidental pelvic lymph nodes when follow-up is recommended based on prior imaging (initial 3-month follow-up)^{7,8}

Indication for combination studies for the initial pre-therapy staging of cancer, OR active monitoring for recurrence as clinically indicated, OR evaluation of suspected metastases

- < 5 concurrent studies to include CT or MRI of any of the following areas as appropriate depending on the cancer: Neck, Abdomen, Pelvis, Chest, Brain, Cervical Spine, Thoracic Spine or Lumbar Spine

For evaluation of suspected infection or inflammatory disease^{8, 9}

~~(ACR, 2018; Cartwright, 2015)~~

- Suspected perianal fistula or occult anorectal abscess (MRI preferred)¹⁰⁻¹² (~~Liang, 2014; O'Malley, 2012; Vogel, 2016~~)
- Suspected infection in the pelvis (based on elevated WBC, fever, anorexia, or nausea and vomiting)
- CT cystourethrography (CTCUG) in the preoperative setting¹³ (~~Maciejewski, 2015~~)
- For suspected urethral stricture or periurethral pathology only if MRI cannot be done^{14, 15} (~~Aldamianheri, 2018; Lv, 2016~~)

For evaluation of known infection or inflammatory disease follow-up¹⁶

(~~ACR, 2013, 2014~~)

- Any known infection to have created an abscess in the pelvis that requires re-evaluation
- Any history of fistula limited to the pelvis that requires re-evaluation or is suspected to have recurred
- For patients with recurrent fistula in anal or perianal Crohn's disease (MRI preferred)¹² (~~Vogel, 2016~~)
- Abnormal fluid collection seen on prior imaging that needs follow-up evaluation and limited to the pelvis

For evaluation of suspected inflammatory bowel disease or follow-up (includes CT enterography and can also approve abdomen CT/CTE)

- For suspected inflammatory bowel disease (Crohn's disease or ulcerative colitis) with abdominal pain **AND** one of the following¹⁶⁻¹⁸ (~~ACR, 2019; Arif-Tiwari, 2019; Lichtenstein, 2018~~):
 - Chronic diarrhea
 - Bloody diarrhea
 Note: For patients under 35 years old, consider MRE
- High clinical suspicion after complete work up including physical exam, labs, endoscopy with biopsy¹⁶⁻¹⁹ (~~ACR, 2019; Arif-Tiwari, 2019; Lichtenstein, 2018; Rubin, 2019~~)
- For CT enterography (CTE), if CT or MRI of the abdomen and pelvis are inconclusive
- Known inflammatory bowel disease (Crohn's or ulcerative colitis) with signs/symptoms (e.g., abdominal pain, diarrhea, or hematochezia) requiring re-evaluation or for monitoring therapy¹⁶ (~~ACR, 2019~~)

For suspected or known hernia

- For pelvic pain due to a suspected occult, spigelian, or incisional hernia when physical exam and prior imaging are non-diagnostic or equivocal or if requested as a preoperative study
- For confirming the diagnosis of a recurrent hernia when ultrasound is negative or non-diagnostic
- Hernia with suspected complications (e.g., bowel obstruction or strangulation, or non-reducible) based on symptoms (e.g., diarrhea, hematochezia, vomiting, severe pain), physical exam (guarding, rebound) or prior imaging²⁰ (~~Halligan, 2018~~)

For evaluation of known or suspected vascular disease (e.g., aneurysms, hematomas)^{21, 22}

~~(Khosa, 2011; Uberoi, 2011)~~

NOTE: CT/MRI should not be approvable without a contraindication to CTAngiography /MRAngiography, such as severe renal dysfunction, contrast allergy, or another specific reason CT/MRI (rather than CTA/MRA) is preferred

- Evidence of vascular abnormality identified on imaging studies and limited to the pelvis
- Evaluation of suspected or known aneurysms limited to the pelvis or in evaluating pelvic extent of aortic aneurysm
 - Known or suspected iliac artery aneurysm > 2.5 cm AND equivocal or indeterminate ultrasound results
 - Prior imaging (e.g., ultrasound) demonstrating iliac artery aneurysm > 2.5 cm in diameter
 - Suspected complications of known aneurysm as evidenced by clinical findings, such as new onset of pelvic pain
 - Follow-up of iliac artery aneurysm (CTA preferred): Every three years for diameter 2.0-2.9 cm and annually for 3.0-3.4 cm. If > 3.5 cm, < six-month follow-up (and consider intervention)²³ ~~(Wanhainen, 2019)~~
- Scheduled follow-up evaluation of aorto/iliac endograft or stent
 - Routine, baseline study (post-op/intervention) is warranted within 1-3 months²⁴ ~~(Chaikof, 2018)~~
 - Asymptomatic at six (6)-month intervals, for one (1) year, then annually
 - Symptomatic/complications related to stent graft – more frequent imaging may be needed

Musculoskeletal Indications

- Known or suspected aseptic/avascular necrosis of hip(s) and MRI is contraindicated after completion of initial x-ray²⁵ ~~(ACR, 2015)~~
- Sacroiliitis (infectious or inflammatory, such as Ankylosing Spondylitis/Spondyloarthropathies) with non-diagnostic or indeterminate after completion of abnormal x-ray and rheumatology workup and MRI is contraindicated²⁶⁻²⁸ ~~(ACR, 2016; Jans, 2014; Kang, 2015)~~
- Sacroiliac joint dysfunction and MRI contraindicated when there is:
 - Persistent back and/or sacral pain unresponsive to four (4) weeks of conservative treatment, received within the past six (6) months, including physical therapy or physician-supervised home exercise plan (HEP)

For evaluation of trauma²⁹

~~(ACR, 2012)~~

- For evaluation of trauma with lab or physical findings of pelvic bleeding
- For evaluation of physical or radiological evidence of complex or occult pelvic fracture or for pre-operative planning of complex pelvic fractures

Other Indications for Pelvic CT:

- For assessment of pelvic congestion syndrome when findings on ultrasound are indeterminate (CTA/MRA preferred)³⁰ ~~(Bookwalter, 2019)~~
- For diffuse, unexplained lower extremity edema with negative or inconclusive ultrasound³¹ ~~(Hoshino, 2016)~~
- For evaluation of suspected May-Thurner syndrome (CTV/MRV preferred)³² ~~(Ibrahim, 2012)~~
- For further evaluation of an isolated right varicocele with additional signs and symptoms (e.g., jaundice, lymphadenopathy, night sweats or weight loss) that suggest malignancy or suspicious prior imaging³³ ~~(Gleason, 2019)~~
- To provide an alternative to initial or follow-up of an indeterminate or inconclusive finding on ultrasound and MRI cannot be performed
- To locate an intrauterine device after ultrasound and plain x-ray are equivocal or non-diagnostic (imaging of the abdomen may also be indicated)^{34, 35} ~~(Boertz, 2012; Nowitski, 2015)~~
- For diagnosis or to guide treatment of urachal anomalies when ultrasound is non-diagnostic^{36, 37} ~~(Buddha, 2019; Villavicencio, 2016)~~

Pre-operative evaluation

- For diagnostic purposes prior to pelvic surgery or procedure

For post-operative/procedural evaluation

- Follow-up of known or suspected post-operative complication involving the hips or the pelvis^{38, 39} ~~(Davis, 2016; Yanny, 2012)~~ within six months
- A follow-up study to help evaluate a patient's progress after treatment, procedure, intervention, or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed

BACKGROUND

CT provides direct visualization of anatomic structures in the abdomen and pelvis and is a fast imaging tool used to detect and characterize disease involving the abdomen and pelvis. Pelvic imaging begins at the iliac crests through pubic symphysis. It has an ability to demonstrate abnormal calcifications or fluid/gas patterns in the viscera or peritoneal space.

In general, ionizing radiation from CT should be avoided during pregnancy. Ultrasound is clearly a safer imaging option and is the first imaging test of choice; although, CT after equivocal ultrasound has been validated for diagnosis. Clinicians should exercise increased caution with CT imaging in children, pregnant women, and young adults due to the risks of exposure to ionizing radiation. Screening for pregnancy as part of a work-up is suggested to minimize the number of unexpected radiation exposures for women of childbearing age.

OVERVIEW

***Conservative Therapy:** This should include a multimodality approach consisting of a **combination of active and inactive components**. Inactive components, such as rest, ice, heat, modified activities, medical devices, acupuncture and/or stimulators, medications, injections (epidural, facet, bursal, and/or joint, not including trigger point), and diathermy can be utilized. Active modalities may consist of physical therapy, a physician-supervised home exercise program**, and/or chiropractic care.

****Home Exercise Program - (HEP)/Therapy:** the following elements are required to meet guidelines for completion of conservative therapy⁴⁰ ~~(ACR, 2015)~~:

- Information provided on exercise prescription/plan AND
- Follow-up with member with documentation provided regarding lack of improvement (failed) after completion of HEP (after suitable 4 week period), or inability to complete HEP due to physical reason- i.e., increased pain, inability to physically perform exercises. (Patient inconvenience or noncompliance without explanation does not constitute “inability to complete” HEP).
- Dates and duration of failed PT, physician-supervised HEP, or chiropractic treatment should be documented in the original office notes or an addendum to the notes.

Ultrasound should be considered prior to a request for Pelvis CT for the following:

- Initial evaluation or follow-up of ovarian mass or abnormal physical finding

Combination request of Abdomen CT/Chest CT - A Chest CT will produce images to the level of L3. Documentation for combo is required.

Helical CT of Prostate Cancer – Conventional CT is not useful in detecting prostate cancer as it does not allow direct visualization. Contrast-enhanced MRI is more useful in detecting prostate cancer. MRI is recommended in patients with suspected cancer but prior negative biopsy because MRI alone can miss up to 26% of clinically significant cancers that would be detected on systemic biopsy ~~(Borofsky, 2018)~~.⁴¹ Helical CT of the prostate may be a useful alternative to MRI in patients with an increasing PSA level and negative findings on biopsy but is not the imaging study of choice.

Pelvic Trauma and CT Imaging – Helical CT is useful in the evaluation of low- or high-flow vascular injuries in patient with blunt or penetrating pelvic trauma. It provides detailing of fractures and position of fracture fragments along with the extent of diastasis of the sacroiliac joints and pubic symphysis. CT helps determine whether pelvic bleeding is present and can identify the source of bleeding. With CT, high flow hemorrhage can be distinguished from low flow hemorrhage aiding the proper treatment.

Imaging of hernias – Most hernias are diagnosed clinically with imaging recommended for the diagnosis of occult hernias or in the evaluation of hernia complications, such as bowel obstruction or strangulation. Groin hernias are at increased risk for incarceration/strangulation in women, right femoral hernias, and when there is a hernia-related hospitalization in the year preceding hernia repair. Morbidity and mortality are increased for strangulated hernias in

patients over 65, prolonged symptoms, incarceration of over 24 hours, symptoms of > 3 days, bowel obstruction, anticoagulant use ~~(Simons, 2018)~~.⁴² To detect occult hernias, ultrasound is a first-line study with a sensitivity of 86% and specificity of 77% compared to 80% sensitivity and 65% specificity for CT ~~(Robinson, 2013)~~.⁴³ According to Miller et al, “Magnetic resonance imaging is generally not considered a first- or even second-line evaluation modality for hernias...” ~~(Miller, 2014)~~.⁴⁴ Based on this analysis MRI is recommended only when ultrasound and CT have been performed and fail to make a diagnosis.

POLICY HISTORY

Date	Summary
<u>April 2022</u>	<ul style="list-style-type: none"> • <u>Added abnormal incidental pelvic lymph nodes when follow-up is recommended based on prior imaging (initial 3-month follow-up) to “Evaluation of suspicious or known mass/tumors”</u> • <u>Within sacroiliitis, clarification of non-diagnostic or indeterminate findings</u>
April 2021	<ul style="list-style-type: none"> • Updated prostate cancer imaging section to reflect current NCCN 2021 changes and adjusted PSA
May 2020	<ul style="list-style-type: none"> • Perianal fistula or abscess (MR preferred) • CT cystourethrography for pre op • Urethral stricture (MR preferred) • IBD for CTE • Hernia section • Pelvic congestion syndrome • To find an IUD after other studies completed • Urachal anomalies • Added for diffuse LE edema with neg or inconclusive US • May-Thurner • LE edema and isolated right varicocele • Updated background section
June 2019	<ul style="list-style-type: none"> • Changed PSA levels from ≥ 20 ng/mL to ≥ 10 ng/mL or clinically advanced disease (T2b, T2c, T3, or T4) AND nomogram per NCCN; deleted Gleason score • Modified guideline to align with abdomen pelvis CT guideline • Added ‘routine, baseline study (post-op/intervention) is warranted within 1-3 months for scheduled f/u evaluation of aorto/iliac endograft or stent • Specified pelvic pain by adding subacute or chronic • Added:

	<ul style="list-style-type: none"> ○ to provide an alternative to initial or f/u of an indeterminate or inconclusive finding on US and MRI cannot be performed ○ suspected perianal fistula; ○ hernia with suspected complications • Added 'within 6 months' time specification for f/u of known or suspected post-operative complication involving hips or pelvis • Updated background information and references
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~~Reviewed / Approved by NIA Clinical Guideline Committee~~

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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